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PRODUCTIVITY GROWTH IN JAPAN

Summary

Since productivity is closely related to overall economic growth, few should be surprised to learn that Japanese productivity has come under intense scrutiny, both from outsiders attempting to divine the secrets of Japan's extraordinary postwar economic performance and from Japanese researchers attempting to understand their own economy better.

Most researchers have found they do not need to look far: Japan's extraordinary rate of savings and the accompanying levels of investment explain a large part of the high rate of productivity growth in Japan. However, other factors also have played a role. And broad measures show a puzzling and hotly debated apparent decline in productivity growth during the 1970s and 1980s that has affected the United States, Japan and other industrial countries. In addition, productivity questions are at the heart of several bilateral issues separating Washington and Tokyo.

Productivity in International Perspective

Many experts have wrestled with the question of why Japan's rate of economic growth has been so high during the postwar period. Since Japan's labor force and population have been growing relatively slowly, high real rates of growth in gross national product translate into almost equally high rates of per capita GNP growth.

Of course, fluctuations in employment levels play some role. For example, as unemployment goes up or down over the business cycle, GNP growth rates vary accordingly. But changes in the unemployment rate and related factors are

likely to be relatively minor actors over a period of years since the variation is inherently limited. Unemployment in Japan, for example, has ranged between 2 and 3 percent in the 1980s. (Differences in measurement render difficult a comparison of this figure with U.S. rates.)

Given that a greater number of workers is a relatively unimportant factor, increasing productivity in the labor force has been a key to Japanese economic growth in the postwar period. Since the industrialized countries are in roughly the same situation regarding population growth, labor productivity growth rates correspond closely to higher rates of GNP growth. Almost by definition, therefore, Japan, which has had the highest GNP growth rates among the industrialized nations over much of the postwar period, also has had among the highest rates of labor productivity growth among all members of the Organization for Economic Cooperation and Development and consistently has ranked first among the largest OECD members (see Table 1).

Table 1: International Comparisons of Labor Productivity, 1960-88

(average annual growth rate of volume of output per employee in the business sector)

	Starting Year	Through 1973	1974-79	1980-85	1986-88*
Japan	1960	9.7%	3.9%	3.1%	3.0%
United States	1962	2.2	0.9	0.9	1.5
West Germany	1962	5.0	3.6	2.3	2.2
France	1963	5.8	3.1	2.5	2.3
United Kingdom**	1961	3.5	1.1	2.7	1.7
Italy	1960	6.9	2.3	1.4	2.4
Canada	1966	2.8	2.3	1.8	1.0
Average for 20 OECD Countries***		4.4	2.0	1.7	1.8

*OECD estimate.
**Excluding oil and gas extraction.
***All OECD countries other than Iceland, Luxembourg, Portugal and Turkey.

Source: Organization for Economic Cooperation and Development

Table 1 refects labor productivity throughout the economy. Some experts suggest that such figures are suspect because productivity measurements in services, such as retail and wholesale trade, are somewhat unreliable; quality improvements are difficult to measure in some industries. As a consequence,

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productivity measures in the services in the United States, Japan and other industrial countries are said to have a downward bias.[1]

Table 2 shows labor productivity trends for services and manufacturing separately. Probably reflecting at least partly biased measures, the productivity growth rate in services is lower than that in manufacturing in both the United States and Japan. But the growth rate of manufacturing labor productivity is much higher in Japan. As Tables 1 and 2 show, labor productivity growth rates have slowed in recent years. While Japan's rate has dropped more percentage points than most other countries, it consistently still has the highest rate. Conversely, while the U.S. rate has slowed only modestly, it is still among the lowest of all industrialized countries.

Table 2: Labor Productivity by Sector in Japan and the United States, 1960-85

(average annual growth rate)

	1960-73		1974-85	
	Manufacturing	Services	Manufacturing	Services
Japan	9.5%	7.9%	6.1%	2.8%
United States	5.5	3.1	3.0	1.3

Source: OECD

The Effects of High Labor Productivity

Japan's high rate of productivity growth for most of the postwar period has permitted it to avoid bitter choices between higher wages and rising profits. With the total output per worker increasing -- another way of expressing labor productivity -- the rising tide has lifted all the boats. Although real wage gains have been substantial, they lag behind the rate of productivity growth (see Table 3). As a result, corporate profits probably have benefited.

Table 3: Labor Productivity and Wage Gains in Japan's Manufacturing Sector, 1975-88

(average annual growth rate)

	Labor Productivity	Nominal Wages	Real Wages
1968-74	9.3%	18.8%	8.2%
1975-80	8.6	8.3	1.7
1980-84	3.9	4.2	1.3
1985	4.4	3.1	1.0
1986	1.8	1.5	1.1
1987	5.8	1.7	1.9
1988	11.5	4.5	4.0

Sources: Japan Productivity Center and Ministry of Labor

[1]See Thierry Noyelle, "Productivity in Services: How Wrong Are the Published Numbers?" Presentation to WEFA Quarterly Service Meeting, Philadelphia, Pennsylvania May 18, 1989, and personal communication.

With the rapid appreciation of the yen that began in 1985, many Japanese economists have argued that this process was likely to stall. The surging currency implied that prices in export markets would have to be higher, leading to sales drops and lower profits. As export firms cut back, the weakness overseas would spread into the domestic market, pulling it down as well. Since the process would occur rapidly, firms would have little chance to adjust capacity. With some of their production facilities idled, productivity would be lower unless workers were released, an unlikely prospect. Yet wage earners, conditioned by years of rapid gains, were unlikely to accept wage cuts that would help restore at least some of the competitiveness lost in overseas markets. In short, according to this view, Japan appeared about to join other industrial countries whose rising unit labor costs reflected sluggish productivity growth and rising nominal wages. Coupled with weak demand in domestic and overseas markets, these factors were likely to lead to higher unemployment, an ailment common to other industrial countries but one that Japan heretofore largely has avoided.

In 1986 the scenario appeared to be playing out as envisaged. Japan recorded a relatively measly 2.5 percent real GNP growth, productivity actually declined by some measures, and unemployment rose. But in late 1986 the economy hit bottom and began recovering, according to the judgment of the Economic Planning Agency. As domestic demand expanded in 1987 and 1988, productivity growth picked up, in part a consequence of fuller capacity utilization. Wage increases continued to be moderate, leading to declining per unit labor costs. Despite a recent uptick in wage gains, this new, more positive pattern of per unit cost has prevailed at least through the early part of 1989 (see Table 4).[2]

The result has been that falling per unit labor costs -- in addition to falling raw materials prices, strong overseas markets and other factors -- have played a role in the ability of Japanese firms to cope successfully with the high yen. (See JEI Report No. 4A, January 27, 1989.) According to the most recent available U.S. Bureau of Labor Statistics survey of 14 countries, the United States had good years in 1987 and 1988 in containing labor costs in manufacturing; the costs actually dipped 1.5 percent in 1987 and rose a modest 0.9 percent in 1988, among the best recorded by the survey group, which included two North American nations, nine in Europe and three in Asia. But Japan's record was even better, topping all the surveyed nations. Japan's per unit labor costs measured in yen fell 5.1 percent in 1987 and another 2.1 percent in 1988. In dollar terms, of course, Japanese costs increased substantially, a consequence of the soaring yen. However, in 1989 Japan stands a good chance of having both falling per unit yen-denominated labor costs and a weaker currency; the effect would be to reduce costs substantially as measured in dollars.

Since 1987 a substantial part of productivity advances can be accounted for by economic recovery: using existing workers and plant capacity more fully, hiring previously unemployed workers and attracting new entrants to the labor force. As argued above, these means of boosting productivity are inherently limited. For the longer term, and for Japan to demonstrate that it can continue to grow at world-champion rates, additional factors will have to come into play. Many of these have been important in the past and are likely to be so in the future. Of these, the most important is capital accumulation.

[2]On this point see Ministry of Labor, Heisei Gannen Rodo Hakusho (1989 Labor White Paper [in Japanese]). (Tokyo: Nihon Rodo Kyokai), pp. 105-106.

The Role of Investment in Labor Productivity Growth

If an army of robots were to be purchased by a firm that knows how to use them, thus replacing many workers and leaving only a handful of employees, then measured labor productivity in the factory would jump. Replicated throughout the economy, such measures would lead to an increase in overall labor productivity.

Robots are a type of equipment spending. For most of the postwar period Japan has had extraordinary rates of spending on plant, equipment and other types of investment (see Table 5). In the 1980s plant and equipment spending relative to GNP has been at least 30 percent higher than in the United States. Similarly, the most recent comparable data show that 11 percent of Japanese gross domestic product in 1987 was devoted to gross investment in machinery and equipment. The comparable figure for the United States was 6.8 percent. According to the most recent OECD data, Japan devoted more of its GDP to this kind of investment than any other OECD country in the mid-1980s. (For details on plant and equipment spending in Japan see JEI Report No. 15A, April 14, 1989).

Table 5: Historical Trends in Gross Domestic Investment in Japan, 1930-86

(percent of gross national product or gross domestic product)

	Series A*	Series B**	Plant and Equipment**
1930-34	13.0%		
1935-39	18.3		
1940-44	18.0		
1946-49	13.2		
1950-54	24.6		
1955-59	29.3		
1960-64	38.4		
1965-69	35.7	33.8%	
1970-74	38.7	37.5	18.7%
1975-79		31.5	14.8
1980-84		30.0	15.3
1985-87		28.6	16.3

*Percent of GNP.
**Percent of GDP.

Note: The data in the first two columns refer to total investment, including that in the public sector and inventory investment by the private sector as well as the private plant and equipment investment shown in the third column.

Sources: Kazuo Sato, "Saving and Investment" in The Political Economy of Japan Volume I: The Domestic Transformation, Kozo Yamamura and Yasukichi Yasuba (eds.) (Stanford, California: Stanford University Press, 1987), p. 138 and the sources cited therein. For plant and equipment data and 1980-87 data, Economic Planning Agency.

With a high percentage of its output going to equipment spending, Japan clearly has had a leg up compared to other industrial countries in expanding labor productivity. As capital flows from Japan have increased during the 1980s, other countries increasingly have benefited from Japan's high internal rate of savings, which are one of the causes of high rates of investment there. According to the Bureau of Economic Analysis, capital flows into the United States have varied between one sixth and one quarter of gross private domestic investment in the late 1980s. With Japan accounting for as much as half of the current account imbalance -- and the investment flows that accompany it -- the direct and indirect role of Japanese savings in financing the expansion of plant and equipment spending in this country is evident.

While the American economy clearly derives many benefits from this Japanese money, the flow of funds from Japan is unlikely to even out rates of capital investment in the two countries. Absent a change in U.S. or Japanese fiscal policies or savings rates, the Japanese current account surplus would have to widen dramatically to accommodate the larger capital flows from Japan required for equal rates of investment in the two countries, something few on either side of the Pacific expect and even fewer advocate. With investment closely tied to labor productivity gains, this argument suggests Japan will probably continue to enjoy higher rates of growth in labor productivity than the United States.

Other Factors Affecting Productivity

Japan's superior productivity performance surely is not due to investment alone. Technology is one additional factor. New production techniques may be introduced along with investment, as in the case of robots. However, technological change need not come bundled with additions to the capital stock. During most of the postwar period Japan has been an importer of technology from the United States and other industrial countries. This factor could account for a substantial growth in output above and beyond what is accounted for by a growing labor force and high investment levels.

Government's role in enhancing productivity is not clear a priori; some experts believe the growth in productivity during the postwar period in Japan occurred despite efforts by Tokyo to slow down the rate of change in the economy, which would have had adverse implications for advancing productivity.

But many believe that government has been a positive factor for speeding the rate of technological change and the rate of productivity growth. In this view, Tokyo creates a positive climate for productivity-enhancing activity, thereby helping firms adopt new technology and develop new products, and in the process pushing productivity ahead faster than otherwise would be possible. For example, protectionist policies in the postwar period are said to have given Japanese firms an opportunity to boost productivity.[3] Conceivably, the

[3]For a recent expression of this view, see Giovanni Dosi, Laura D'Andrea Tyson and John Zysman, "Trade, Technologies, and Development: A Framework for Discussing Japan," in Chalmers Johnson, Laura D'Andrea Tyson and John Zysman, ed., Politics and Productivity: How Japan's Development Strategy Works (Cambridge, Massachusetts: Ballinger Publishing Company, 1989), pp. 3-34.

government-business partnership could play its role primarily by boosting the capital stock, either directly or by actions that make capital formation more profitable. But, if the economy is affected in this way, then policymakers should feel free to choose from a menu of well-known choices to accomplish the goal of more investment spending, not necessarily choosing a more cooperative government-business relationship as the means toward that end. The government-business partnership hypothesis is most interesting if it turns out to explain productivity growth separately from any influence that capital accumulation might have.

Federal Reserve Bank of Chicago economist David Alan Aschauer has identified a quite different, but equally positive, explanation of the role of government that has implications for the difference in productivity growth between the United States and Japan.[4] His data strongly suggest that productivity is related to U.S. government spending on public facilities. He also did a rough international comparison of the relationship of productivity to public investment. According to Mr. Aschauer's calculations, for the period 1973-85 Japan spent more (5.1 percent of gross domestic product) on public investment than any of the other seven largest industrial countries and obtained the largest increase in labor productivity, 3.3 percent per year. The United States spent less than any other country (0.3 percent of GDP) and had the lowest rate of labor productivity growth, 0.6 percent. Furthermore, the remaining countries (Canada, United Kingdom, Italy, France and West Germany) showed the same pattern; those that spent more on public investment had higher rates of labor productivity growth. Italy, which spent more on public investment relative to gross domestic product than France or West Germany, was the only country proving an exception to the pattern but only insofar as those two countries were concerned. Given the apparent relationship between public investment and productivity in the United States and high public investment and high labor productivity growth rates in Japan, Mr. Aschauer's results suggest the possibility that a portion of the relatively high rates of productivity growth in Japan results from government investment spending.

For U.S. policymakers the implications of Mr. Aschauer's data and conclusions, if they hold up under closer scrutiny, are revolutionary. Rather than reduce the size of government, as Reaganomics taught, Washington should expand it, albeit selectively to focus on spending related to investment, rather than government consumption. The problem, for example, is not high taxes stifling initiative but clogged freeways preventing productive employees from getting to work. In addition to touring Toyota Motor Corp. plants, U.S. policymakers visiting Japan should absorb the lessons of the high-speed rail network in Japan of bullet trains, or Shinkansen. As it has expanded over the years, the Shinkansen has reduced travel times dramatically, permitting, among other things, easy one-day business trips between Tokyo and such business centers as Sendai, now only two hours north of the capital. (Japan, of course, still has unexploited opportunities for productivity-enhancing public investment. Thousands of white-collar Tokyo commuters arrive at work apparently none the worse for wear and tear from the crowded subways.)

[4]David Alan Aschauer, "Is Public Expenditure Productive?" Journal of Monetary Economics 23 (1989), pp. 177-200. See also "Rx for Productivity: Build Infrastructure," Chicago Fed Letter, No. 13, September 1988.

Total Factor Productivity

One way to examine the question of the relative roles of investment as well as other factors is to look at a concept called total factor productivity. While various approaches are possible, the essence is always the same: how much would output have grown in the absence of growth in the labor force and capital stock? Because total factor productivity is calculated as the residual growth of output after taking into account factors such as the above, its value varies considerably depending on how those other variables are measured. The total factor productivity approach does not answer the question of what explains the remainder, but it does establish an approximate upper limit on the amount of productivity improvement likely to be accounted for independently by factors such as a government-business partnership. Table 6 shows some comparative results. The figures vary tremendously, reflecting in part differences in the way labor and capital are measured.

Table 6: Total Factor Productivity Comparisons

(average annual growth rates)

	Japan			United States		West Germany
	Uno	Imamura	OECD	OECD	BLS*	OECD
Through 1973	2.6%	9.8%	6.1%	1.5%	2.2%	2.8%
1973-79	-0.1	2.4	1.8	-0.1	0.5	1.8
1979-86	n.a.	n.a.	1.7	0.0	0.6	0.8

*Manufacturing sector only

Sources: First two columns computed from Kimio Uno, Japanese Industrial Performance (Amsterdam: North Holland, 1987), pp. 167-78, and Hajime Imamura, "Sources of Quality Change in Labor Input and Economic Growth in Japan 1960-1979," Keio Economic Studies, XIX, No. 2 (1982), p. 82. OECD data from Eileen Appelbaum, "Productivity Growth and Employment: A Comparison of the U.S. and Germany." Paper presented to WEFA Quarterly Service Meeting, Philadelphia, Pennsylvania May 18, 1989, Table 1. BLS data from Department of Labor, Bureau of Labor Statistics.

The figures in Table 6 show how fast the economies of the countries described would have grown in the absence of growth in the capital stock or labor force. As such, they should be compared with the actual GNP growth rates during the period shown. Japan's GNP grew at a 4 percent annual rate between 1973 and 1979 but, according to the figures in Table 6, total factor productivity growth was between -0.1 and 2.4 percent per year. Similarly, between 1979 and 1986 annual GNP growth was 3.9 percent and total factor productivity growth, according to the OECD, was 1.7 percent per year. In other words, probably less than half, and perhaps none, of the economic growth in Japan during this period was accounted for by residual factors. Similar calculations for the United States and West Germany show that total factor productivity was even less important as a source of growth in the United States than in Japan, but somewhat more important in West Germany.

Some researchers have attempted to discover biases in the data presented in Table 6 that might be skewing the results. For example, Kimio Uno of the University of Tsukuba incorporated the possibility that the capital stock measurement employed in the studies such as those summarized in Table 6 may not necessarily make sufficient allowance for the fact that, at least until recently, the capital stock was getting older, with negative implications for total productivity. Mr. Uno found that this factor shaved as much as 0.6 percentage point off the rate of growth of output during the period 1956 to 1980 in Japan.[5] This suggests that the reported rates of total factor productivity increase are higher than those reported in Table 6.

But capital stock is not the only factor that might be improperly measured. Over long periods of time, the labor force has become more educated. In addition, as young workers replace retirees and continuing workers become more experienced, the level of productivity will change. Figures from Hajime Imamura of Keio University suggest that these factors together contributed 0.4 percentage point annually to the growth in output in Japan between 1960 and 1979, the period that he studied.[6] If he is right, some portion of the increase in total factor productivity should be reassigned to labor force changes, reducing the residual. Mr. Imamura's figures as reported in Table 6 reflect this adjustment.

Incorporating these factors into Mr. Uno's results leaves the figures almost unchanged since the two effects offset each other. The same changes boost the rate of increase in total factor productivity as measured by Mr. Imamura because the effect of aging capital is assigned to the capital variable rather than to the residual. Overall, the effects would increase the reported values for Japan in Table 6 by 0.6 percentage point or less per year.

Even after taking account of these adjustments, two conclusions stand out.

- The rate of total factor productivity growth in Japan is small, particularly in recent years, considering the rate of economic growth during the period.

- For this reason, Japan's high rate of investment is probably of overwhelming importance in explaining its high rates of economic and labor productivity growth. Mr. Imamura's figures suggest, for example, that from 1960 to 1979, increases in the capital stock accounted for about two-thirds of Japan's growth in output and an even higher percentage of the increase in labor productivity.[7]

The OECD figures suggest that total factor productivity growth has been faster in Japan than in the United States throughout the period covered. Recall, however, that labor productivity growth rates -- which include the effect

[5]Calculated from data in Kimio Uno, Japanese Industrial Performance (Amsterdam: North Holland, 1987), p. 185.

[6]Calculated from data in Hajime Imamura, "Sources of Quality Change in Labor Input and Economic Growth in Japan 1960-1979," Keio Economic Studies, XIX, No. 2 (1982), p. 82.

[7]Ibid.

of capital accumulation -- are much higher in Japan (see Table 1). This implies that, although Japan's investment spending is not the only cause of its outstanding economic performance, capital spending is probably the most important factor by far, with the remaining determinants (technology imports, indigenous technological development, new technology incorporated in investment, public investment and the government-business partnership) left to explain a fairly small phenomenon.

The Productivity Slowdown

One of Mr. Aschauer's objectives was to explain the so-called productivity slowdown: for the United States, which has the best data, the rate of total factor productivity growth fell from 2 percent per year between 1950 and 1970 to 0.8 percent per year between 1971 and 1985 and to 0.7 percent between 1981 and 1985.[8] The data in Table 6, while different from Mr. Aschauer's, show the same pattern, not just for the United States, but for West Germany and Japan as well. In addition, crude updates using the same data sources and approximately the same techniques employed by Mr. Uno in the study cited in the table, show a continuing pattern. On this basis, total factor productivity in Japan grew at a 1.4 percent annual rate between the 1976-78 average level and the 1979-81 average level but fell to 0.5 percent between 1979-81 and 1982-84 and again to 0.4 between 1982-84 and 1985-87. (These figures should be used to compare changes in the rate of increase over time and not with U.S. figures or with the data in Table 6.)

The apparent slowing of Japan's rate of total factor productivity growth may be the result of exhausting previously fertile means of boosting productivity. For example, with Japan now at least approaching the technology frontier in many industries, the gains from importing technology from abroad may have fallen significantly. A slowdown in productivity-boosting rural-urban migration may have played a role. Dropping rates of investment in the 1970s and -- at least until recently -- in the 1980s may have slowed the introduction of new technology. At the same time, the results raise a question of whether Japan has unexploited opportunities to boost total factor productivity. Ironically, considering America's own mediocre record on boosting total factor productivity, Washington argues that Japan in fact is rife with just such opportunities.

Productivity as a Trade Issue

For the United States the question of Japanese productivity is important partly because allegedly low productivity in certain sectors in Japan affects opportunities for U.S. exporters. For example, agriculture is never far from the top of the agenda of Washington's gripes with Tokyo. Chief among such complaints is that Japanese farming is relatively unproductive and heavily protected. Similarly, the United States argues that the distribution system, particularly the wholesale and retail trade industries' portion, is very inefficient, raising prices to Japanese consumers and hamstringing the efforts of U.S. and other foreign firms to penetrate the Japanese market. Washington also apparently believes some parts of the enormous Japanese construction industry are inefficient. The United States has negotiated with Japan over access to this market on the grounds that U.S. firms are competitive suppliers of at least certain kinds of construction services but, at least until recently, have been given inadequate access.

[8]Aschauer, op. cit., pp. 194-95.

Japan's Economic Planning Agency could not agree more, at least on the question of relative inefficiencies. In its 1988 economic white paper EPA found that the agriculture, trade and construction industries generally were far less efficient in Japan relative to manufacturing than they were in the United States and West Germany (see Table 7). Such figures, of course, have to be interpreted carefully. Some American travelers to West Germany find the level of retail services very low compared to the United States; labor savings come at the cost of quality, according to this argument. Conversely, Japanese buyers get something for their money in retail trade. Small, and no doubt very inefficient, restaurants dot the Japanese urban landscape, offering unsurpassed levels of service. Retailers often provide extremely quick turnaround on goods out of stock and after-sales service is exceptional by U.S. standards.

Table 7: International Comparisons of Sectoral Productivity

(percent of 1978-85 average productivity relative to manufacturing)

	Primary Industry	Construction	Wholesale and Retail Trade
Japan	32.4%	85.3%	63.5%
United States	39.7	100.4	134.3
West Germany	74.9	78.7	66.9

Source: Economic Planning Agency

Despite these considerations, most experts acknowledge the relative inefficiency of many nonmanufacturing industries in Japan. To the extent the figures on these sectors are meaningful, they suggest that resource reallocation would benefit Japanese productivity more than comparable measures would add in the United States. If workers, plant and equipment left agriculture and construction for manufacturing, for example, the same levels of output might be possible in those sectors even while output in manufacturing increased.

But the presence of productivity differentials in the Japanese economy does not necessarily mean that removal of those inefficiencies would narrow the bilateral trade imbalance. For example, the reallocation of resources into manufacturing that would result from reducing the size of the agriculture or distribution sectors could boost Japanese exports of manufactured goods.

Nor would U.S. firms necessarily make a killing in any inefficient sectors. The figures do not mean that productivity in U.S. construction is higher than in Japan, only that construction has higher productivity than manufacturing in this country, while the reverse is true in Japan. True, if all goods and services could be traded internationally and if markets operated perfectly, the United States would end up exporting to Japan those goods and services which it could produce relatively efficiently compared to manufactured goods, whether or not those sectors were absolutely more efficient than their Japanese counterparts. But such an argument overlooks the nature of the goods and services involved. High-rise buildings in Japan, for example, by their nature cannot be imported from the United States; at most, U.S. firms could participate in the Japanese market, where they might encounter whatever encumbrances to productivity bedevil Japanese firms.

Tokyo, of course, makes its own arguments about productivity. It has complained, for example, about the low rate of savings in the United States and the short time horizon of U.S. firms, both of which it argues limit investment and productivity growth in this country.

Conclusion

While some analysts seek the key to Japan's productivity growth in the practices of Japanese firms or government, the reality is much simpler. Although productivity growth in Japan has many sources, Japan's extraordinary rates of savings and capital accumulation have played the major roles. Japan has not escaped a productivity slowdown in the 1970s and 1980s that has been a source of concern in the United States and Western Europe. However, with its rate of productivity growth still high compared to other industrial countries, Japan has avoided some of the difficult tradeoffs that have plagued those areas.

In late 1989 the most immediate question concerning Japanese productivity is whether the pronounced growth in productivity since 1987 that has accompanied the economic recovery is purely cyclical or not. Certainly a portion of that growth in productivity has to be attributed to cyclical factors, such as rising capacity utilization and demand that makes fuller use of employed workers. As Japan nears full capacity utilization and faces incipient labor shortages, future growth will come to depend critically on long-run sources of productivity growth. With the rising rate of investment in 1988 and 1989, one can see the outlines of productivity advances lasting for years. If Japanese industry achieves that trajectory, the economy could enter a new era of sustained high growth, with exports, imports and foreign investment all increasing. Those Americans who worry about Japan's trade surplus might be apprehensive, since such a development would not necessarily reduce Japan's imbalance, and U.S.-Japanese interdependence would both expand and increasingly be on Japanese terms. But those accustomed to viewing this country's Pacific ally as a source of strength to U.S. economic and security interests would welcome such a scenario, especially if the U.S. economy simultaneously shows renewed rigor.

For further information, contact Douglas Ostrom.

Jo Ann Carter provided research assistance.

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The views expressed in this report are those of the author and do not necessarily represent those of the Japan Economic Institute.

Table 4 inadvertently was omitted from page 4 in the text. We regret any inconvenience this may have caused readers. The full table is printed below.

Table 4: Productivity and Unit Labor Cost in Japan's Manufacturing Sector, 1984-89

(change from same period of previous year)

	Nominal Wages	Productivity	Unit Labor Cost
1984			
January-March	4.2%	8.8%	-4.2%
April-June	4.3	8.0	-3.4
July-September	3.6	6.6	-2.9
October-December	3.3	6.3	-2.8
1985			
January-March	3.7	2.7	0.4
April-June	4.0	2.8	1.1
July-September	2.7	0.8	1.8
October-December	2.9	-1.2	4.1
1986			
January-March	3.2	-1.2	4.4
April-June	1.6	-2.1	3.7
July-September	1.3	-1.6	3.0
October-December	0.5	-0.9	1.3
1987			
January-March	1.1	1.3	-0.2
April-June	0.5	2.4	-1.8
July-September	1.7	6.4	-4.4
October-December	2.9	10.0	-6.5
1988			
January-March	4.0	11.1	-6.4
April-June	4.9	9.9	-4.4
July-September	4.1	8.1	-3.6
October-December	4.9	6.5	-1.6
1989			
January-March	5.1	5.5	-0.4

Note: These measurements of productivity and labor costs are different from those shown in Table 3.

Source: Ministry of Labor